COMMONWEALTH of VIRGINIA

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VIRGINIA WASTE MANAGEMENT BOARD ENFORCEMENT ACTION
AMENDMENT TO
ORDER BY CONSENT
ISSUED TO
SCOTT COUNTY

SECTION A: Purpose

This is an Amendment to a Consent Order issued under the authority of Va. Code § 10.1-1402, 10.1-1455 and 10.1-1185 between the Virginia Waste Management Board and Scott County for the purpose of revising certain provisions of the Order issued by the Virginia Waste Management Board to Scott County regarding the Scott County Landfill on November 24, 2003.

SECTION B: Basis for the Amendment

1. The Board originally issued a consent order to Scott County ("County") on November 24, 2003 ("Order") to ensure that the County's operation of the Parcel 2 waste management unit was in compliance with the Virginia Waste Management Act and the Virginia Solid Waste Management Regulations. Pursuant to Appendix A of the Order, the County was required to cease receiving waste at the facility on November 24, 2008.

2. By letter dated October 5, 2007, the County requested that the Order be amended to extend the deadline to cease receiving of waste at the facility by 6 months, from November 24, 2008 (per Item 2 of Appendix A of the Order) to May 24, 2009 (per Item 1 of Appendix A of this amended Consent Order).

3. In response to the original Order, the County proceeded to designate a location, provide a budget, complete the design, and advertise and receive bids for construction of a transfer station. However, all bids received were significantly higher than budget projections, and negotiations with the lowest bidder proved unsuccessful in trying to bring project costs down to an acceptable level. The reason for the County's request is to allow time for the County to redesign and rebid the project, in an effort to keep the project within budget.

4. SWRO waste inspection and permit staff have indicated that capacity is available to receive waste for the additional time without reaching vertical closure elevations. Also, the request does not conflict with the statutory deadline in HB 1205 for the facility to cease receiving waste, which is December 31, 2012.

5. Therefore, the Board and the County agree that it is appropriate to amend the Order as described below.

SECTION C: Agreement and Order

Accordingly the Virginia Waste Management Board, by virtue of the authority granted it pursuant to Va. Code §10.1-1455, orders the County, and the County voluntarily agrees that:

1. The County shall perform the actions described in Appendix A of this amended Consent Order, which supersedes and cancels Appendix A of the original Order. Both the Virginia Waste Management Board and the County understand and agree that this Amendment does not alter, modify, or amend any other provision of the original Order.

2. Any plans, reports, schedules or specifications attached hereto or submitted by the County and approved by the Department pursuant to this amended Consent Order are incorporated into this amended Consent Order. Any non-compliance with such approved documents shall be considered a violation of this amended Consent Order.

And it is so ORDERED this _____ day of _____, 2008

_____
Dallas R. Sizemore, SWRO Regional Director
Department of Environmental Quality

Scott County voluntarily agrees to the issuance of this Amendment to Consent Order.

Name: David S. Reduine

Date: 1/22/08

Commonwealth of Virginia

~~City~~/County of Scott

The foregoing document was signed and acknowledged before me this 22nd day of January, 2008 by David S. Reduine, Chairman of Scott
(month) (name) (title)

County, on behalf of Scott County.

1-22-2008
Date

Shirley M. Blalock
Notary Public
#168869

My commission expires: May 31, 2009.

Shirley M. Blalock
Commonwealth of Virginia
Notary Public
My Commission Expires 05/31/2009

APPENDIX A

In order to comply with the provisions of the Virginia Waste Management Act and the Virginia Solid Waste Management Regulations, the County agrees to implement the following actions as described below:

Termination of Waste Disposal Activities

1. The County shall cease all disposal of solid waste on Parcel 2 within 66 months of the effective date of the original Consent Order (no later than May 24, 2009), or when the final closure elevations in the vertical expansion area are reached, whichever first occurs.

2. The County shall not create or begin disposal of solid waste in a new waste unit on Parcel 1 or Parcel 2, or dispose of solid waste on any other adjacent property owned by the County, without first meeting the technical requirements of 9 VAC 20-80-10 *et seq.*, and obtaining a Permit from the Director.

Closure and Post-closure Activities

3. The County shall, within 30 days after the last receipt of waste, implement the Department approved closure plan and complete all closure activities as required by 9 VAC 20-80-250.E.

4. Unless the post-closure care period is reduced, or extended, by the Director pursuant to 9 VAC 20-80-250.F.3, the County shall conduct post-closure care for thirty (30) years as required in 9 VAC 20-80-250.F.

5. If leachate is detected at the facility at any time in the future, the County shall immediately begin leachate management activities as specified in 9 VAC 20-80-290, and maintain an up-to-date Leachate Control Design Plan in the facility operating record.

6. The County shall comply with the groundwater monitoring requirements contained in the attached Modules X [Detection monitoring] and XI [Assessment monitoring] incorporated by reference into this Order. The County shall maintain an up-to-date Groundwater Monitoring Plan and a copy of the site specific Groundwater Protection Standards in the facility operating record.

7. The County shall continue to implement gas management activities as specified in 9 VAC 20-80-280. The County shall maintain an up-to-date Gas Monitoring Plan in the facility operating record.

8. The County shall maintain financial assurance as required under 9 VAC 20-70-10 *et seq.*

Remedial Actions

9. The County shall perform any groundwater corrective action required under Part V of the Regulations should the results of the groundwater monitoring warrant such action. The County shall implement a Corrective Action program meeting the requirements of 9 VAC 20-80-310.B.2; 9 VAC 20-80-310.B.4; and 9 VAC 20-80-310.C.1.

10. The County shall immediately comply with the requirements of 9 VAC 20-80-280.E.1. If methane is detected in excess of compliance levels, including the development and submittal of a gas remediation plan for Department approval.

General

11. DEQ shall have access to the facility for purposes of inspection, observation, and collection of samples. DEQ shall be allowed access during operation, closure, and post-closure period of the facility. DEQ access shall be ensured for the duration of this Order.

12. Any document that the County submits for Director review and approval after the effective date of this Order shall be accompanied by the applicable fee as would be required of Permitted solid waste facilities under 9 VAC 20-90 *et. seq.*, and Appendix 7.4 of the Regulations.

13. Scott County shall maintain all records relating to sanitary landfill operation as would be required by the Virginia Solid Waste Management Regulations to include, but not limited to, monitoring results, financial assurance documents, training documentation, waste disposal records, corrective action, groundwater, gas, leachate, erosion and sedimentation control and stormwater management plans.

Attachments

In order to comply with the provisions of the Virginia Waste Management Act and Solid Waste Management Regulations, the County agrees to comply with all terms and conditions of these attached modules:

Module I:	General Conditions
Module X:	Detection Monitoring
Module XI:	Assessment Monitoring

MODULE I
GENERAL CONDITIONS

I.A. EFFECTS

The permittee is allowed to dispose of solid waste on-site in accordance with the enclosed conditions.

Any disposal of solid waste not authorized by Permit #023, or the Consent Order is prohibited. Compliance with the terms of Permit #023 does not constitute a defense to any order issued or any action brought under Sections 10.1-1402(18), 10.1-1402(19), or 10.1-1402(21) of the Virginia Waste Management Act (Chapter 14, Title 10.1, Code of Virginia (1950), as amended); or any other law or regulation for protection of public health or the environment. Permit provisions are severable, and if any provision of Permit #023, or the application of any provision of Permit #023 to any circumstances is held invalid, the application of such provision to other circumstances and the remainder of Permit #023 shall not be affected thereby.

Terms used herein shall have the same meaning as those in the Virginia Waste Management Act, and Part I and other pertinent parts of the Virginia Solid Waste Management Regulations (9 VAC 20-80-10 et. seq.), unless specifically provided as otherwise. Where terms are not defined in the regulations or Permit #023, the meaning associated with such terms shall be defined by the generally accepted scientific or industrial meaning of the term or a standard dictionary reference. "Director" means the Director of the Department of Environmental Quality, or his designated or authorized representative.

I.B. DUTIES AND REQUIREMENTS

The permittee shall comply with all conditions of Permit #023 and 9 VAC 20-80-10 et. seq. The effect of permit #023 is detailed in 9 VAC 20-80-550, and it shall be the duty of the permittee to insure the applicable requirements are met. Additionally, the permittee is subject to the recording and reporting requirements detailed in 9 VAC 20-80-570. The facility will be subject to a groundwater monitoring program per Modules X and XI. In addition to these requirements, the following additional conditions are invoked per 9 VAC 20-80-490, and shall be complied with:

I.B.1 Noncompliance may be authorized by a schedule of compliance [subdivisions C and G of 9 VAC 20-80-550]. Any other noncompliance constitutes a violation of Virginia Waste Management Act and is grounds for enforcement action, or for Permit revocation, revocation and re-issuance, or modification [9 VAC 20-80-600 and 9 VAC 20-80-620].

I.B.2 The permittee shall comply with the requirements of Permit #023 and any provision of RCRA Subtitle D (Title 40, Code of Federal Regulations, Section 258) as those requirements become applicable upon their effective date. Permit #023 may not act as a shield against compliance with any part of RCRA or any other applicable federal regulation, state regulation or state law.

I.B.3 In an enforcement action, it shall not be a defense for the permittee that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of Permit #023.

I.B.4 In the event of Permit noncompliance, the permittee shall take all reasonable steps to minimize releases of solid wastes or waste constituents to the environment and shall carry out measures to prevent significant adverse impacts on human health or the environment.

I.B.5 The permittee shall at all times properly operate and maintain all units (and related appurtenances) which are installed or used by the permittee to achieve compliance with the operations manual and the conditions of this permit.

Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing, and training, and adequate laboratory and process controls, including appropriate quality assurance/quality control procedures. This provision requires the operation of back-up or auxiliary equipment only when necessary to achieve compliance with the conditions of this permit.

I.B.6 The permittee shall furnish to the Director, within a reasonable time, any relevant information which the Director may request to determine compliance with the permit, regulations or the Act. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit by the date specified in the request.

I.B.7 The permittee shall allow the Director, or an authorized representative, upon the presentation of appropriate credentials, to:

I.B.7.a. Enter at reasonable times upon the permitted facility where a regulated unit or activity is located or conducted, or where records must be kept under the conditions of this permit;

I.B.7.b. Have access to and copy, at reasonable times, any

records that must be kept under the conditions of this permit;

I.B.7.c. Inspect at reasonable times any unit, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

I.B.7.d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by Virginia Waste Management Act, any substances or parameters at any location within his control.

I.B.8 Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample to be analyzed must be the appropriate method from the latest edition of Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, EPA Publication SW-846, as updated.

I.B.9 Permit #023 is not transferable to any person, unless approved by the Director. The Director may require modification or revocation and re-issuance of the Permit pursuant to subdivision F of 9 VAC 20-80-550. Before transferring ownership or operation of the facility during its operational life, the permittee shall notify the new owner or operator in writing of the requirements of 9 VAC 20-80-240 and 9 VAC 20-80-480 of the Virginia Solid Waste Management Regulations, the Financial Assurance Regulations (9 VAC 20-70-10 et. seq.).

I.B.10 All facilities must have a Certified Operator as required by the Board of Waste Management Facility Operators-Licensing Regulations, 18 VAC 155-10 et. seq.

I.B.11 Any groundwater protection standards set for the facility based on Alternate Concentration Limits (ACL's) shall be approved under a variance following 9 VAC 20-80-760. If any condition outlined in the variance is violated, the variance approval shall be immediately withdrawn.

I.C. DOCUMENTS TO BE MAINTAINED AT THE FACILITY

The permittee shall maintain the following documents at the facility, or readily accessible to Department representatives, until post-closure is complete and certified by a professional engineer, and shall maintain amendments, revisions, and modification to

these documents:

I.C.1 Design Plans.

I.C.2 Operations Manual.

I.C.3 Closure and Post-Closure Plan.

I.C.4 Groundwater Monitoring Plan.

I.C.5 All other documents/records required and applicable from the following:

I.C.5.a. Monitoring records for leachate, gas, and groundwater.

I.C.5.b. Inspection records as required from construction/installation, operational, closure, post-closure inspection requirements.

I.C.5.c. Personnel training records.

I.C.5.d. Daily operational records (i.e., solid waste received and processed, fill area records, records of special wastes accepted, a logbook which is a daily narrative account of the activities at the landfill).

I.D. DOCUMENT SUBMITTALS

In addition to the documents/records/reports to be submitted per the requirements of 9 VAC 20-80-10 et. seq., and § 10.1-1410.2.B of the Code of Virginia, the permittee shall also submit to the Director, within the timeframes listed below the following regarding post-closure monitoring:

I.D.1 Not less than 180 days prior to the completion of the post-closure monitoring and maintenance period as prescribed by the Board's regulations or by the Director, the owner or operator shall submit to the Director a certificate, signed by a professional engineer licensed in the Commonwealth, that post-closure monitoring and maintenance have been completed in accordance with the facility's post-closure plan.

I.D.2 The certificate submitted under I.E.1, shall be accompanied by an evaluation, prepared by a professional engineer licensed in the Commonwealth, and signed by the owner or operator, which assesses and evaluates the landfill's potential for harm to human health and the environment in the event that post-closure monitoring and maintenance are discontinued.

I.D.3 If the Director determines that continued post-closure monitoring or maintenance is necessary to prevent harm to human health or the environment, he shall extend the post-closure period for such additional time as the Director deems necessary to protect human health and the environment and shall direct the owner or operator to submit a revised post-closure plan and to continue post-closure monitoring and maintenance in accordance therewith. Requirements for financial assurance shall apply throughout such extended post-closure period.

I.E. REPORTS, NOTIFICATIONS, AND SUBMISSIONS TO THE DIRECTOR

All reports, notifications, or other submissions which are required to be sent or given to the Director should be sent by certified mail to:

Director
Virginia Department of Environmental Quality
Office of Waste Permitting
P. O. Box 1105
Richmond, VA 23218

Director
Southwest Regional Office
Virginia Department of Environmental Quality
P. O. Box 1688
Abingdon, VA 24212

MODULE - X
DETECTION MONITORING

X.A. PURPOSE

Detection monitoring is designed to ensure the earliest possible recognition of a leachate release from a regulated waste management unit and to characterize the release as a method of determining whether further groundwater monitoring action is warranted.

The Detection monitoring program entails establishment of the following:

X.A.1. Groundwater sampling program for Appendix 5.5 constituents.

X.A.2. Standard groundwater sampling field procedures

X.A.3. Standard laboratory analytical procedures.

X.A.4. Appropriate statistical methodologies for use in determining if a release has occurred.

X.A.5. Additional sampling & investigative requirements in the event a statistically significant release has been documented.

This Module describes the groundwater monitoring well network and groundwater sampling analysis requirements utilized to monitor the waste management unit described in Module I. Assessment monitoring program requirements, those triggered by a statistically significant increase in any Detection monitoring constituent, are described in Module XI. This Module also describes conditions regarding statistical analysis, data evaluation, record-keeping, reporting, and special requirements should an Assessment monitoring program become necessary.

The groundwater monitoring and reporting requirements set forth here are minimum requirements. The Director may require, by amending the Consent Order, any owner or operator to install, operate, and maintain a groundwater monitoring system and program that contains requirements more stringent that those of 9 VAC 20-80-250.D whenever it is determined that such requirements are necessary to prevent significant adverse effects on public health and the environment [9 VAC 20-80-250.D.2.c].

X.B. GROUNDWATER MONITORING SYSTEM DESIGN

The uppermost aquifer on site is unconfined and consists of fractured carbonate bedrock.

Based on available data, groundwater on site flows towards the northwest and southeast.

The monitoring well network consists of seven (7) wells, the functions of which are listed below. The facility has been granted a variance from the requirement of having an upgradient well as part of the monitoring network.

Cross-gradient Well(s)	Downgradient Well(s)	Piezometers
MW-1	MW-2	
MW-5	MW-3	
MW-6	MW-4	
MW-7		

X.C. WELL INSTALLATION / MAINTENANCE / ABANDONMENT

The permittee shall install and maintain a groundwater monitoring system as specified below [9 VAC 20-80-250.D.3.a]:

X.C.1. The permittee shall install and maintain groundwater monitoring wells under the timelines and locations specified in the facility's Groundwater Monitoring Plan (GMP), a copy of which shall be retained on site.

X.C.2. Within 45-days of new well completion, the permittee shall supply the Director information including the:

- identifier number,
- surveyed elevation,
- boring log,
- casing length,
- total depth,
- a well completion diagram,
- and, a certification from a qualified groundwater scientist that the monitoring wells have been installed in accordance with the submitted plans presented in the GMP [9 VAC 20-80-250.D.3.d].

X.C.3. The permittee shall construct and maintain the monitoring wells identified in Condition X.B in accordance with the methodology, plans, and specifications [9 VAC 20-80-250.D.3.e] of any Operations and Maintenance plan presented in the GMP.

X.C.4. All wells that require abandonment shall be sealed and abandoned in accordance with the GMP.

X.C.5. Within 45-days of well abandonment, the permittee shall supply the Director information including field methods utilized, and a certification from a qualified groundwater scientist verifying the well abandonment activities met

all applicable requirements.

X.D. DETECTION MONITORING CONSTITUENTS

The permittee shall monitor the wells described in Condition X.B for the Detection monitoring constituents specified below [9 VAC 20-80-250.D.5.c.(1)] which includes 15 inorganic constituents and 47 organic constituents.

	Inorganic Constituents	Organic Constituents
1	Antimony (Total)	Acetone
2	Arsenic (Total)	Acrylonitrile
3	Barium (Total)	Benzene
4	Beryllium (Total)	Bromochloromethane
5	Cadmium (Total)	Bromodichloromethane
6	Chromium (Total)	Bromoform; Tribromomethane
7	Cobalt (Total)	Carbon Disulfide
8	Copper (Total)	Carbon tetrachloride
9	Lead (Total)	Chlorobenzene
10	Nickel (Total)	Chloroethane, Ethyl chloride
11	Selenium (Total)	Chloroform; Trichloromethane
12	Silver (Total)	Dibromochlormethane; Chlorodibromomethane
13	Thallium (Total)	1,2-Dibromo-3-chlorpropane; DBCP
14	Vanadium (Total)	1,2-Dibromoethane; Ethylene dibromide; EDB
15	Zinc (Total)	o-Dichlorobenzene; 1,2-Dichlorobenzene
16		p-Dichlorobenzene, 1,4-Dichlorobenzene
17		Trans-1,4-Dichloro-2-butene
18		1,1-Dichlorethane; Ethylidene chloride
19		1,2-Dichlorethane; Ethylene dichloride
20		1,1-Dichloroethylene; 1,1-dichloroethene
21		Cis-1,2-Dichloroethylene, cis-1,2-dichloroethene
22		Trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene
23		1,2-Dichloropropane; Propylene dichloride
24		cis-1,3-Dichloropropene
25		Trans-1,3-Dichloropropene
26		Ethylbenzene
27		2-Hexanone; Methyl butyl ketone
28		Methyl bromide; Bromomethane
29		Methyl chloride; Chloromethane
30		Methylene bromide; Dibromomethane
31		Methylene chloride; Dichloromethane
32		Methyl ethyl keton; MEK, 2-Butanone
33		Methyl iodide; Iodomethane
34		4-Methyl-2-pentanone; Methyl isobutyl ketone
35		Styrene
36		1,1,1,2-Tetrachloroethane
37		1,1,2,2-Tetrachlorethane
38		Tetrachloroethylene; Tetrachloroethene; Perchloroethylene
39		Toluene
40		1,1,1-Trichloroethane; Methylchloroform
41		1,1,2-Trichloroethane
42		Trichloroethylene; Trichloroethene
43		Trichlorofluoromethane; CFC-11
44		1,2,3-Trichloropropane
45		Vinyl acetate
46		Vinyl chloride
47		Xylenes

X.E. GROUNDWATER SAMPLING AND ANALYTICAL PROGRAM SPECIFICS

The permittee shall use the following techniques and procedures when obtaining and analyzing samples from the groundwater monitoring wells described in Condition X.C. [9 VAC 20-80-250.D.4.a & b]:

X.E.1. Samples shall be collected using appropriate field techniques and as otherwise described in the GMP.

X.E.2. Samples shall be preserved (and shipped) as appropriate in accordance with the procedures specified in the GMP.

X.E.3. Samples shall be analyzed as appropriate and in accordance with the procedures specified in the GMP.

X.E.4. Samples shall be tracked and controlled using appropriate chain-of-custody procedures and as otherwise specified in the GMP.

X.E.5. Samples shall undergo proper quality assurance and quality control (QA/QC) procedures and as otherwise specified in the GMP.

X.F. GROUNDWATER SURFACE ELEVATION MEASUREMENTS

X.F.1. As a means of determining the rate and direction of groundwater flow on site, the static groundwater elevation in site monitoring wells shall be measured, to an accuracy of 0.01 foot, immediately prior to purging, and within a 24 hour period (to avoid temporal variations in groundwater flow) each time a monitoring well is sampled [9 VAC 20-80-250 D.4.c].

X.F.2. The permittee shall determine the groundwater flow rate and direction in the uppermost aquifer each time groundwater is sampled [9 VAC 20-80-250 D.4.c] and shall report this information to the Director as specified in:

X.F.2.a. Condition X.F.3.

X.F.2.b. Condition X.J.1.

X.F.2.c. Condition X.K.2.b.

X.F.3. At least annually, the permittee shall evaluate data regarding static groundwater surface elevations to determine whether the requirements of the monitoring well locations continue to be satisfied and submit the information as part of

Condition X.K.3. If the evaluation shows that one or more of the the monitoring well(s) no longer function as designed, the permittee shall [9 VAC 20-80-250 D.3.a]:

X.F.3.a. Notify the Department of the need to modify the number, location, or depth of the monitoring wells part of Condition X.B,

X.F.3.b. Within that notification, provide for Department review, proposed locations, keyed to the Site Plan, for new (replacement) monitoring wells, and

X.F.3.c. Complete modifications to the monitoring well network, prior to the next regularly scheduled groundwater sampling event, by whatever method deemed necessary to bring the groundwater monitoring system into compliance with 9 VAC 20-80-250.D.3.

X.G. GROUNDWATER SAMPLING REQUIREMENTS

X.G.1. The permittee shall collect, preserve, and analyze groundwater samples pursuant to Condition X.E and 9 VAC 20-80-250.D.4.b.

X.G.2. Within 180-days from the date of the Consent Order issuance, the permittee shall have established background values for all groundwater monitoring constituents in Condition X.D.

X.G.3. Background concentrations shall be established within timelines established in Condition X.G.2 by collecting a minimum of four (4) independent groundwater samples from each well for analysis of the Detection monitoring constituents specified in Condition X.D. [9 VAC 20-80-250.D.5.c.(1) and (2)].

X.G.4. After establishing background in accordance with Condition X.G.2, and then throughout the active life (including closure) and post-closure care of the facility, the permittee shall:

X.G.4.a. sample and analyze all monitoring wells on at least a semiannual basis [9 VAC 20-80-250.D.5.c.(2)] unless as specified otherwise by the Director.

X.G.4.b determine whether or not there is a statistically significant increase over the background values for each Detection Monitoring constituent identified in Condition X.D, each time groundwater sampling is performed [9 VAC 20-80-250.D.4.h].

X.G.4.c. In determining whether such an increase has occurred, the

permittee must compare the constituent concentrations at each monitoring well specified in Condition X.B to the background value determined in accordance with Condition X.G.3, in accordance with the statistical procedures specified in Condition X.H [9 VAC 20-80-250.D.5.c.(3)].

X.H. STATISTICAL PROCEDURES

When evaluating the groundwater monitoring results for each constituent specified in Condition X.D, the permittee:

X.H.1. Shall use a statistical test meeting the requirements of Appendix 5.4 of the VSWMR, and as described in the GMP, to determine whether or not any statistically significant increase in groundwater constituents in downgradient monitoring wells over initial site background concentrations has taken place [9 VAC 20-80-250 D.5.c.(3)].

X.H.2. Within 30-days from the receipt of the laboratory analytical results from each groundwater sampling event [9 VAC 20-80-250.D.4.h.2], the permittee shall complete the statistical evaluations described in Condition X.H.1.

X.H.3. When the comparison shows a statistically significant increase in the downgradient wells when compared to the upgradient wells [9 VAC 20-80-250 D.5.c] the permittee shall follow the requirements of Condition X.L.

X.I. RECORD-KEEPING REQUIREMENTS

The permittee shall retain, in a specified location, all well installation, abandonment, groundwater elevation data, and groundwater analytical data obtained in accordance with this Module throughout the active life (including closure) and post-closure care of the facility [9 VAC 20-80-250 D 8 a (1) and b (1)]. The records must include the laboratory data (detection & quantification limits) for all Detection monitoring constituents for each monitoring event, all mathematical computations, statistical test results, chain-of-custody records, and field data [9 VAC 20-80-490].

X.J REPORTING REQUIREMENTS FOR AQUIFER CHARACTERISTICS

X.J.1. Within 15-days of completion of the initial evaluation (measurements) of groundwater elevation data, the Permittee shall submit, the rate and direction information, as required by Condition X.F.2,

X.J.2. Within 45-days of monitoring well installation, the permittee shall submit a

report documenting the construction procedures, as well as a certification from a qualified groundwater scientist that the wells have been installed in accordance with the submitted plans,

X.J.3. Within 45-days of monitoring well abandonment, the permittee shall submit a report documenting the abandonment procedures,

X.J.2. By March 1st of each calendar year, the results of the annual evaluation of the calculated groundwater flow rate and direction, as required under 9 VAC 20-80-250.D.8, including a potentiometric surface map and the results of the evaluation of groundwater surface elevations, as required under Condition X.F.3,

X.K REPORTING REQUIREMENTS FOR GROUNDWATER QUALITY DATA

X.K.1. Until background is established in accordance with Condition X.G.3, the permittee shall report to the Director:

X.K.1.a. Within 15-days of receipt of the data from the laboratory, the laboratory and analytical results [9 VAC 20-80-250.D.8.a(2)(a),

X.K.1.b. Within 30-days of establishing background, the background values and the statistical computations necessary to determine background values in a report titled Background Determination.

X.K.2. After establishing background in accordance with Condition X.G.3, the Permittee shall, prior to the close of each sampling compliance period, submit to the Director:

X.K.2.a. the results of the analytical data, in a format/manner necessary for the determination of statistically significant increases [9 VAC 20-80-250 D 5 c (3)] and,

X.K.2.b. groundwater elevation data.

X.K.3. After establishing background in accordance with Condition X.G.3, the permittee shall provide an Annual report to the Director, no later than March 1st of the following calendar year which includes [9 VAC 20-80-250 D 8 a (2) (b & c)]:

X.K.3.a. The concentrations of each constituent specified in Condition X.D for each monitoring well along with the statistical evaluations required by Condition X.H.5 and 9 VAC 20-80-

250.D.8.a.(2)(b).

X.K.3.b A notification of those constituents specified in Condition X.D which have been identified as having a statistically significant increase over established background [9 VAC 20-80-250.D.8.a(2)(b)].

X.K.3.c. A description of the proposed response actions to the groundwater evaluation data contained in the Annual report, when applicable.

X.L. RESPONSE TO STATISTICALLY SIGNIFICANT INCREASES

If the permittee determines, pursuant to Condition X.G.4.b, that there is a statistically significant increase over the background concentrations at any downgradient well for any of the Detection monitoring constituents identified in Condition X.D, the permittee shall perform one of the following actions:

X.L.1. Within 14-days of noting the increase, notify the Director in writing that the facility may be affecting groundwater quality. The notification must:

X.L.1.a. Indicate which groundwater monitoring constituents have shown statistically significant increases over background [9 VAC 20-80-250 D 5 c (3) (a)] and,

X.L.1.b. Indicate that an Assessment monitoring program meeting the requirements of 9 VAC 20-80-250 D 6., except as provided for in Condition X.J.2, will be initiated within 90 days [9 VAC 20-80-250 D 5 c (3) (b)] of noting the increase; or,

X.L.2. Within 14-days of noting the increase, notify the Director in writing that the facility may be affecting groundwater quality. The notification must:

X.L.2.a. Indicate which groundwater monitoring constituents have shown statistically significant increases over background [9 VAC 20-80-250 D 5 c (3) (a)] and,

X.L.2.b. Indicate that the permittee will, within 90-days of noting the increase, attempt to demonstrate to the Department that a source other than the waste management unit caused the contamination; or that the statistically significant increase resulted from an error in groundwater sampling, an error in laboratory analysis, an error in statistical evaluation, or the natural variation in groundwater quality [9 VAC 20-80-250.D.5.c.(4)].

X.M. ALTERNATE SOURCE DEMONSTRATION

A report titled Alternate Source Demonstration, which documents the demonstration noted under Condition X.L.2.b, shall be certified by a qualified groundwater scientist and submitted under separate cover for review and approval by the Director within 90 days of providing the notification under Condition X.L, unless the submission timeframe has been extended by the Director for good cause.

X.M.1. If a successful demonstration of an alternate source for the noted increase is made and approved by the Director, the permittee may continue in the Detection monitoring program as defined in this Module.

X.M.2. If a successful demonstration of an alternate source for the noted increase is not made within 90 days, the permittee shall initiate an Assessment monitoring program as required in 9 VAC 20-80-250 D 6 prior to the next regularly scheduled groundwater sampling event [9 VAC 20-80-250.D.5.c(4) following the Director's determination.

MODULE - XI
ASSESSMENT MONITORING

XI.A. PURPOSE

The goal of the Assessment monitoring program is to determine the migration rate, physical extent, and concentration of solid waste constituents in the uppermost aquifer.

The Assessment monitoring program entails establishment of the following:

XI.A.1. Groundwater sampling program for Appendix 5.1 constituents.

XI.A.2. Background concentrations for all detected Appendix 5.1 constituents.

XI.A.3. Groundwater protection standards.

XI.A.4. Appropriate statistical methodologies for use in determining if a groundwater protection standard exceedance has occurred.

XI.A.5. The nature & extent of any groundwater constituent found at concentrations which exceed the groundwater protection standard.

This Module describes the groundwater monitoring well network and groundwater sampling analysis requirements utilized to monitor the waste management unit described in Module I. Corrective Action monitoring program requirements, those triggered by a statistical exceedance of one or more groundwater protection standards, are described in Module XIV and XV (if applicable). This Module also describes conditions regarding modifications related to groundwater monitoring plans, constituent detect notification requirements, and special requirements should an investigation regarding the nature & extent of a release become necessary.

The groundwater monitoring and reporting requirements set forth here are minimum requirements. The Director may require, by amending the Consent Order, any owner or operator to install, operate, and maintain a groundwater monitoring system and program that contains requirements more stringent that those of 9 VAC 20-80-250.D whenever it is determined that such requirements are necessary to prevent significant adverse effects on public health and the environment [9 VAC 20-80-250.D.2.c].

XI.B. AQUIFER DESCRIPTION

The uppermost aquifer on site is unconfined and consists of fractured carbonate bedrock.

Based on available data, groundwater on site flows toward the northwest and southeast.

XI.C. WELL INSTALLATION / MAINTENANCE / ABANDONMENT

The monitoring well network consists of 7 wells, the functions of which are listed below:

Cross-gradient Well(s)		Downgradient Well(s)		Piezometers
MW-1	MW-6	MW-2	MW-4	
MW-5	MW-7	MW-3		

The Permittee shall install and maintain the groundwater monitoring system described above, as noted below [9 VAC 20-80-250.D.3.a]:

XI.C.1. INSTALLATION: The Permittee shall install and maintain groundwater monitoring wells under the timelines and locations specified in the facility's Groundwater Monitoring Plan, found as the GMP.

XI.C.2. DOCUMENTATION: Within 45 days of well completion, the Permittee shall supply the Director information including the identifier number, surveyed elevation, boring log, casing length, total depth, and a completion diagram for each monitoring well, along with a certification from a qualified groundwater scientist that the monitoring wells have been installed in accordance with the submitted plans presented in the GMP [9 VAC 20-80-250.D.3.d].

XI.C.3. ABANDONMENT: All wells that require abandonment shall be sealed and abandoned in accordance with guidelines in the GMP.

XI.C.4. NOTIFICATION: Within 45 days of well abandonment, the Permittee shall supply the Director information including the field methods utilized, along with a certification from a qualified groundwater scientist verifying the well abandonment activities met all applicable state, and local requirements.

XI.C.5. MAINTENANCE: The Permittee shall construct and maintain the monitoring wells identified in Condition XI.B in accordance with the methodology, plans, and specifications [9 VAC 20-80-250.D.3.e] of the Operations and Maintenance plan included in the GMP.

XI.D. ASSESSMENT MONITORING FREQUENCY AND CONSTITUENTS

The Permittee shall monitor the wells described in Condition XI.B. for the following constituents, at the following frequency [9 VAC 20-80-250 D 6 b]:

XI.D.1. APPENDIX 5.1 EVENT: On an annual basis, which is not to exceed 360 days between sampling events, the Permittee shall sample for all constituents

specified in Appendix 5.1 of the Virginia Solid Waste Management Regulations, as amended.

XI.D.2. APPENDIX 5.5 & DETECTS EVENT: On a semi-annual basis, the Permittee shall sample for all constituents specified in Appendix 5.5 of the Virginia Solid Waste Management Regulations, as amended, as well as any constituent either detected or quantified during any previous Appendix 5.1 sampling event.

XI.D.3. SAMPLE FREQUENCY CONSTRAINTS: During each calendar year of semi-annual Assessment monitoring, there shall not elapse more than 180 days [9 VAC 20-80-250.D.5.c(2)] between the Appendix 5.1 and Appendix 5.5 + detects sampling events. Permitted landfills which meet the criteria of H.B. 2471 (proximity to wetlands) shall not exceed 90 days between sampling events.

XI.D.4. ALTERNATE SAMPLE CONSTITUENTS: The director may delete any of the Appendix 5.1 constituents if the Permittee demonstrates the deleted constituents are not reasonably expected to be in, or derived from, the permitted waste management unit. The Demonstration must be submitted following the requirements of 9 VAC 20-80-790 and must satisfy 9 VAC 20-80-750.A.

XI.D.5. ALTERNATE SAMPLE FREQUENCY: The Director may establish a frequency which is other than annual for the Appendix 5.1 sampling event, at any time during the active life (including closure) and post-closure care period, if one or more of the technical factors listed under 9 VAC 20-80-250.D.6.c are found applicable.

XI.E. GROUNDWATER SAMPLING AND ANALYTICAL PROGRAM SPECIFICS

The Permittee shall use the following techniques and procedures when obtaining and analyzing samples from the groundwater monitoring wells described in Condition XI.B. [9 VAC 20-80-250.D.4.a & b]:

XI.E.1. Samples shall be collected using appropriate field techniques and as otherwise described in the GMP.

XI.E.2. Samples shall be preserved (and shipped) as appropriate in accordance with the procedures specified in the GMP.

XI.E.3. Samples shall be analyzed as appropriate and in accordance with the procedures specified in the GMP.

XI.E.4. Samples shall be tracked and controlled using appropriate chain-of-custody procedures and as otherwise specified in the GMP.

XI.E.5. Samples shall undergo proper quality assurance and quality control (QA/QC) procedures and as otherwise specified in the GMP.

XI.F. GROUNDWATER SURFACE ELEVATION MEASUREMENTS

XI.F.1. As a means of determining the rate and direction of groundwater flow, the static groundwater elevation in each monitoring well shall be measured, to an accuracy of 0.01 foot, immediately prior to purging, and within a 24 hour period (to avoid temporal variations in groundwater flow) each time a monitoring well is sampled [9 VAC 20-80-250 D.4.c].

XI.F.2. The Permittee shall determine the groundwater flow rate and direction in the uppermost aquifer each time groundwater is sampled [9 VAC 20-80-250 D.4.c] and shall report this information to the Director, including a potentiometric surface map as specified in Condition XI.P.3.

XI.G. ASSESSMENT MONITORING SAMPLING REQUIREMENTS

XI.G.1. METHODS: The Permittee shall collect, preserve, and analyze groundwater samples pursuant to Condition XI.E and 9 VAC 20-80-250.D.4.b.

XI.G.2. BACKGROUND SAMPLING: Within 180 days from the date of the initial Assessment monitoring sampling event, the Permittee shall have established background values for all detected Appendix 5.1 constituents [9 VAC 20-80-250.D.6.b and d(3)].

XI.G.3. BACKGROUND EVENT FREQUENCY: Background concentrations shall be established within timelines established in Condition XI.G.2 by collecting a minimum of four (4) independent groundwater samples from each well for analysis for all detected Appendix 5.1 constituents specified in Condition XI.D.1 [9 VAC 20-80-250.D.6.b].

XI.G.4. ROUTINE SAMPLING: After establishing background in accordance with Condition XI.G.2, and then throughout the active life (including closure) and post-closure care of the facility, the Permittee shall:

XI.G.4.a. Sample and analyze all monitoring wells on at least a semiannual basis, unless as specified otherwise by the Director, by taking at least one sample from each well (upgradient and downgradient).

The initial semi-annual event must be undertaken within 90 days of obtaining the results of the initial Appendix 5.1 Assessment Monitoring sampling event [9 VAC 20-80-250 D 6 d (2)]:

XI.G.4.b. For each sampling event, determine whether there have been any Appendix 5.1 constituents detected.

XI.G.4.c. For the purpose of Condition XI.G.4.b., detectable levels are defined as any constituent concentration found above the laboratory detection limit, but which may be found below the limit of quantitation.

XI.G.5. NOTIFICATION: Based on the results of actions undertaken as part of Condition XI.G.4.b, notify the Director within 14 days of certifying the laboratory analytical data by listing those Appendix 5.1 constituents which are found at detectable concentrations [9 VAC 20-80-250.D.6.d(1)] and the wells in which they were found.

XI.G.6. RECORDS: Place the record the analytical results (concentrations) for each Assessment monitoring sampling event in the facility operating record [9 VAC 20-80-250.D.6.d(2)].

XI.H. STATISTICAL PROCEDURES

When evaluating the groundwater monitoring results for each constituent specified in Condition XI.D, the Permittee:

XI.H.1. METHODS: shall use a statistical test meeting the requirements of Appendix 5.4 of the VSWMR, and as described in the GMP, to determine whether or not any statistically significant increase in groundwater constituents in downgradient monitoring wells over initial site background concentrations has taken place [9 VAC 20-80-250 D.5.c.(3)].

XI.H.2. TIME CONSTRAINTS: within 30-days [9 VAC 20-80-250.D.4.h.2] from the receipt of the laboratory analytical results from each groundwater sampling event, the Permittee shall complete the statistical evaluations described in Condition XI.H.1.

XI.H.3. RESULTS: when the statistical comparison shows:

XI.H.3.a. Any statistically significant increase over background in any downgradient well; - groundwater monitoring shall continue in the Assessment monitoring program.

XI.H.3.b. If all concentrations of Appendix 5.1 constituents are shown to be statistically at or below background values for two consecutive Appendix 5.1 sampling events; - the Permittee may revert to Detection monitoring [9 VAC 20-80-250.D.6.e] as described in Module X with the Director's approval.

XI.H.4. NOTIFICATION: If the statistical comparison indicates a return to Detection monitoring may be warranted, the Permittee shall notify the Director [9 VAC 20-80-250.D.6.e] within 14 days of such a finding.

XI.H.5. REPORTING: The results of the statistical comparison shall be included in reports submitted under Condition XI.P.2 and XI.P.3.

XI.I. GROUNDWATER PROTECTION STANDARDS

Within 90 days of completing Condition XI.G.3., the Permittee shall:

XI.I.1. METHODS: Propose groundwater protection standards for all Appendix 5.1 constituents detected in accordance with the methods and limitations set forth under 9 VAC 20-80-250.D.6.h.

XI.I.2. VARIANCE: Request a Variance, in accordance with 9 VAC 20-80-760, for the use of Alternate Concentration Limits (ACL's) as groundwater protection standards for any detected Appendix 5.1 constituent which lacks promulgated USEPA Maximum Concentration Levels (MCL's) or site specific background data [9 VAC 20-80-250.D.6.i].

XI.I.3. OPERATING RECORD: Upon Director approval of the proposed groundwater protection standards, a copy of the final groundwater protection standard listing shall be placed in the facility's operating record [9 VAC 20-80-250.D.6.d(4)].

XI.J. GROUNDWATER MONITORING PLAN

Within 120 days of completing Condition XI.G.3., the Permittee shall:

XI.J.1. Request an Amendment in accordance with 9 VAC 20-80-620 to incorporate groundwater monitoring Modules X, and XI; or where Modules X, and XI have already been established, to modify the Modules as necessary to incorporate any changes in the groundwater monitoring program.

XI.K. GROUNDWATER PROTECTION STANDARD TRIGGER ACTIONS

Every Assessment monitoring event conducted after the establishment of groundwater protection standards shall be compared to the groundwater protection standards in the following manner:

XI.K.1. RESULTS BELOW BACKGROUND: If all concentrations of Appendix 5.1 constituents are shown to be statistically at or below groundwater protection standards & background values for two consecutive Appendix 5.1 sampling events; - the Permittee may revert to Detection monitoring [9 VAC 20-80-250.D.6.e] as described in Module X with the Director's approval.

XI.K.2. ABOVE BACKGROUND BUT BELOW GPS: If the Permittee finds that one or more solid waste constituents are detected in groundwater samples at concentrations statistically above facility background concentrations, but below the groundwater protection standard; - the permitte shall continue in the Assessment monitoring program as described in this Module.

XI.K.3. GPS EXCEEDANCE: If a statistically significant increase of any Appendix 5.1 constituent above the applicable groundwater protection standard is noted; - the Permittee shall:

XI.K.3.a. NOTIFICATION: Within 14 days of determining the statistically significant increase, notify the Director in writing of such finding and indicate whether an Alternate Source Demonstration [9 VAC 20-80-250.D.6.g(2) or an Assessment of Corrective Measures will be undertaken [9 VAC 20-80-250.D.6.g.(1)(d)].

XI.L. ALTERNATE SOURCE DEMONSTRATION

X.L.1. A report titled Alternate Source Demonstration, which meets the technical criteria of 9 VAC 20-80-250.D.6.g.(2) shall be certified by a qualified groundwater scientist and submitted under separate cover for review and approval by the Director within 90 days of providing the notification under XI.K.3.a, unless the submission timeframe has been extended by the Director for good cause.

X.L.2. If a successful demonstration of an alternate source for the noted increase is made and approved by the Director within 90 days, the Permittee may continue in the Assessment monitoring program as defined in this Module.

X.L.3. If a successful demonstration of an alternate source for the noted increase is not made within 90 days, the Permittee shall initiate an Assessment of Corrective

Measures as required in 9 VAC 20-80-250.D.6.g(1)(d).

XI.M. INITIATION OF ASSESSMENT OF CORRECTIVE MEASURES

XI.M.1. METHODS: Within 90 days of the notification under Condition XI.K.3.a, or the Director determination under Condition X.L.3; - the Permittee shall initiate a Nature and Extent Study which characterizes the nature (chemical characteristics of the exceeding constituents) and extent (vertical and horizontal) of the release by installing additional monitoring wells as necessary (at least one installed at the facility boundary in the direction of contaminant migration downgradient from each well in which an exceedance has been noted). The sampling of these additional wells shall take place in accordance with the constituent list under Condition XI.D.2 [9 VAC 20-80-250 D 6 g (1)(a)],

XI.M.2. NOTIFICATION: Within 14 days of obtaining certified laboratory results from the sampling of monitoring wells part of the Nature and Extent Study [9 VAC 20-80-250 D 6 g (1)], notify all persons [9 VAC 20-80-250 D 6 g (1) c] who may own land or reside on land that directly overlies any part of the groundwater plume that may have migrated off-site.

XI.M.3. REPORTING: Within 180 days of determining the statistically significant increase, submit an Assessment of Corrective Measures report meeting the technical criteria of 9 VAC 20-80-310 A et. seq.

XI.N. RECORD-KEEPING REQUIREMENTS

The Permittee shall retain, in a specified location, all well installation reports, abandonment reports, groundwater elevation and flow direction data, groundwater protection standards, and groundwater analytical data obtained in accordance with this Module throughout the active life (including closure) and post-closure care of the facility [9 VAC 20-80-250 D 8 a (1) and b (1)]. The records must include the laboratory data (detection & quantification limits) for all monitoring constituents for each monitoring event, all mathematical computations, statistical test results, chain-of-custody records, and field data [9 VAC 20-80-490].

XI.O REPORTING REQUIREMENTS FOR AQUIFER CHARACTERISTICS

XI.O.1. Within 45 days of monitoring well installation, the Permittee shall submit a report documenting the construction procedures, as well as a certification from a qualified groundwater scientist that the wells have been installed in accordance with the submitted plans,

XI.O.2. Within 45 days of monitoring well abandonment, the Permittee shall submit a report documenting the abandonment procedures,

XI.O.3. By March 1st of each calendar year, under the requirements of Condition XI.P.3, report the results of the annual evaluation of the groundwater flow rate and direction, as required under 9 VAC 20-80-250.D.8, including a potentiometric surface map with directional arrows, along with the results of the evaluation of groundwater surface elevations conducted to determine whether the requirements of the monitoring well locations continue to be satisfied. If the evaluation shows that one or more of the monitoring well(s) no longer function as designed, the Permittee shall [9 VAC 20-80-250 D.3.a]:

XI.O.3.a. Notify the Department of the need to modify the number, location, or depth of the monitoring wells part of Condition X.B,

XI.O.3.b. Within that notification, provide for Department review, proposed locations, keyed to the Site Plan, for new (replacement) monitoring wells, and

XI.O.3.c. Complete modifications to the monitoring well network, prior to the next regularly scheduled groundwater sampling event, by whatever method deemed necessary to bring the groundwater monitoring system into compliance with 9 VAC 20-80-250.D.3.

XI.P REPORTING REQUIREMENTS FOR GROUNDWATER QUALITY DATA

XI.P.1. MISCELLANEOUS: While in the Assessment monitoring program, the Permittee shall make the various report submissions described in the Conditions above under the timeframes listed, unless an extension has been granted by the Director for good cause.

XI.P.2. SEMI-ANNUAL REPORTS: After establishing background in accordance with Condition XI.G.2, the Permittee shall, prior to the close of each sampling compliance period, submit to the Director the results of the analytical data in a report titled Semi-Annual Groundwater Report (SAGR), in a format/manner necessary for the determination of statistically significant increases over background and/or groundwater protection standards [9 VAC 20-80-250.D.5.c.(3)]

XI.P.3. ANNUAL REPORTS: The Permittee shall provide an Annual report (AR) to the Director, no later than March 1st of the following calendar year which includes [9 VAC 20-80-250 D 8 a (2) (b & c)]:

XI.P.3.a. The concentrations of each constituent specified in Condition XI.D for each monitoring well along with the statistical evaluations required by 9 VAC 20-80-250.D.8.a.(2)(b).

XI.P.3.b A listing of those constituents which have been identified as having a statistically significant increase over established background and / or groundwater protection standards [9 VAC 20-80-250.D.8.a(2)(b)].

XI.P.3.c. A potentiometric surface map depicting groundwater flow directions.

XI.P.3.d. A description of the proposed response actions to the groundwater elevation evaluation contained in the Annual report and described under Condition XI.O.3; when applicable.

XI.P.3.e. In the case where the semi-annual groundwater reports submitted under Condition XI.P.2. contain copies of the laboratory analytical data sheets, copies of the data sheets are not required to be submitted a second time in the annual report.